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PATENT & TRADEMARK OFFICE

PATENT
Docket No.: 45751USA6C.012

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#34/Appeal Brief SNT 4/21/00

In re Application of:	**Box AF**
JOSEPH P. KRONZER ET AL.	Group Art Unit: 3761
Serial No.: 08/661,834	
Filed: June 11, 1996	Examiner: Aaron J. Lewis
For: FIBROUS FILTRATION FACE MASK	

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APPEAL BRIEF

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

This Appeal Brief is submitted in accordance with the terms of 35 U.S.C. § 134 and 37 C.F.R. § 1.192 in response to the final Office Action mailed May 23, 2000. Appellants furnish the Appeal Brief in triplicate. Please charge the processing fee of $310.00 (37 C.F.R. § 1.17(c)) to Deposit Account No. 13-3723.

I. Real Party In Interest

The Minnesota Mining and Manufacturing Company and the 3M Innovative Properties Company, both of St. Paul, Minnesota are the real parties in interest.

II. Related Appeals and Interferences

Appellants are unaware of any related appeals or interferences.

III. Status of Claims

Claims 25-37 are pending in this application and are the subject of this appeal.

IV. Status of Amendments

No amendments have been filed after the final rejection.

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V. Summary of the Invention

Appellants' invention is a fibrous filtration face mask that is capable of maintaining low degrees of surface fuzz. Persons who wear cup-shaped fibrous filtration face masks have complained that the fibers in the mask create a tickling sensation that makes them want to scratch their face. Because fibrous filtration face masks are worn to protect wearers from breathing impurities in the air and/or to protect others from being exposed to impurities exhaled by the wearer, persons wearing such masks must resist displacing the mask from their face to relieve the itching sensation. Otherwise, the wearer may risk exposing themselves or others to potentially dangerous substances.

The appellants have significantly alleviated the surface fuzz problem by providing a face mask that includes a non-woven fibrous layer that is molded into a cup-shaped configuration, where the fibrous layer contains at least about 40 weight percent thermally bonding fibers and at least about 10 weight percent bicomponent fibers. The molded, cup-shaped, non-woven fibrous layer has a surface fuzz value of not less than 7.5 after being subject to a surface fuzz abrasion test. If the bicomponent fiber content is 85 weight percent or greater, the surface fuzz value exceeds 8.0. The face mask of this construction may be assembled in accordance with the method that was patented by appellants in U.S. Patent 5,307,796.

VI. Issues Presented

1. The Examiner asserts that "[a] broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite". Are independent claims 25 and 32 indefinite under 35 U.S.C. § 112, second paragraph, because at least about 40 weight percent of the fibers in the nonwoven web are thermally bonding fibers and at least about 10 weight percent are bicomponent fibers? Are these claims also indefinite under the same statutory provision because they specify a surface fuzz value of not less than 7.5 but also have a proviso that if the bicomponent fiber content is 85 weight percent or greater then the surface fuzz value exceeds 8.0?

2. Independent claim 25 includes staple fibers as an optional ingredient. The Examiner asserts that the language "an optionally (ii) staple fibers," renders the claim indefinite because "[i]t is not clear whether applicant intends to claim the combination of a fibrous filtration face

mask and staple fibers." Does the language "and optionally" render the scope of the claim indefinite under 35 U.S.C. § 112, second paragraph?

3. Independent claims 25 and 32 both require that the surface fuzz value to exceed 8.0 if the bicomponent fiber is 85 weight percent or greater. Dyrud discloses a molded fibrous shaping layer that may have a staple to bicomponent fiber weight-percent ratio ranging from 0/100 to 75/25. The Dyrud shaping layer is formed in a hot molding operation. The highest surface fuzz value that is achievable using a hot molding technique is 8.0 when 100 percent bicomponent fiber is used. Dyrud does not disclose how to produce a molded fibrous layer that has a surface fuzz value exceeding 8.0. Without such an enabling teaching, would Dyrud have rendered applicants' invention obvious to a person of ordinary skill under 35 U.S.C. § 103?

VII. Grouping of Claims

Claims 25-37 will stand or fall together.

VIII. Argument

Issue 1

The Examiner's position on this issue finds no support in the law. As the Board is aware, the second paragraph in 35 U.S.C. § 112 requires that the claims reasonably set forth the metes and bounds of the claimed invention.[1] Contrary to the Examiner's position, there is nothing inherently wrong with further refining a broad range or limitation with a more narrower range or limitation within the same claim. Under the Examiner's position, it would be impossible for an applicant to further refine the meaning of a more generically described term within the same claim. Perhaps part of the problem stems from the Examiner's construction of the claim. In the Office Action dated May 23, 2000, the Examiner indicated that "it is not clear whether applicant intends the claims to be drawn to 'at least 40 weight percent bicomponent fibers' or '85 weight percent or greater [bicomponent fibers]'". Appellants' claims, however, require at least about 40 weight percent **thermally bonding fibers,** not bicomponent fibers. Thus, the claim language is not inconsistent. And because no evidence or cogent reasoning has been put forth, showing why

[1] *See, In re Moore*, 169 USPQ 236 (CCPA 1971); *In re Asano*, 201 USPQ 315, 317 (Pat. Off. Bd. Apls. 1978).

a person of ordinary skill would not understand the scope of the invention being claimed, the 112 rejection cannot stand on this basis.

The claims also recite that when the bicomponent fiber content is at least 10 weight percent, then the surface fuzz is not less than 7.5, and when the bicomponent fiber content is 85 percent or greater then the surface fuzz exceeds 8.0. (Table 1 and page 4, lines 12-17). Appellants are unable to understand why the Examiner believes that this language does not reasonably set forth the metes and bounds of the invention. The Examiner states that "it is not clear whether applicant intends the claims to be drawn to a surface fuzz value of 'not less than 7.5' or a surface fuzz value which 'exceeds 8.0.'" To appellants, however, the language appears perfectly clear: the surface fuzz value is not less than 7.5 under all embodiments, and exceeds 8.0 when the bicomponent fiber content is 85 weight percent or greater.

Appellants, therefore, believe that the Examiner has clearly erred in maintaining this rejection and accordingly should be reversed.

Issue 2

The Examiner has held that the use of "...and optionally..." renders the scope of the claim unclear. This position, however, also does not find support in the law. The Board of Patent Appeals and Interferences has held that use of the word "optionally" does not render a claim indefinite because it is "akin to expressions such as "up to" and "0 to....".[2] The Examiner therefore has erred in maintaining this Section 112 rejection.

Issue 3

Dyrud discloses a fibrous filtration face mask that has a fibrous filtration layer disposed on one side or between molded shaping layers. The shaping layers can be prepared from fiber mixtures that include staple fiber and bicomponent fiber in a weight-percent ratio ranging from 0/100 to 75/25 (column 4, lines 29-32). Preferably, the shaping layers include at least 50 weight-percent bicomponent fiber, and more preferably at least 75 weight-percent bicomponent fiber (column 4, lines 32-37). Dyrud also discloses that the face mask can be prepared without

[2] *Ex parte Cordova*, 10 USPQ 2d 1949, 1952 (Bd. Pat. App. & Int. 1989).

bicomponent fiber (column 4, lines 38-39). The shaping layers are molded in a hot molding operation (column 2, lines 48-68; column 8, lines 13 to 34).

If Dyrud's teaching is followed, using its hot molding method, it would not be expected that a surface fuzz value exceeding 8.0 would be achieved, even when using 100% bicomponent fiber. *See* Fig. 6 and Table 1 of applicants' specification, where the maximum surface fuzz value for a hot molded web that had 100% bicomponent fiber was not greater than 8.0. In order to achieve higher surface fuzz values, the shaping layers need to be produced in a cold molding method (see U.S. Patent 5,307,796 and appellants' specification). Using a cold molding method, a superior surface fuzz value, for example, 9.6, can be achieved as shown in Table 1. Dyrud does not teach or suggest a cold molding method for making a shaping layer, and therefore Dyrud would not be expected to provide the surface fuzz values of the present invention. Accordingly, Dyrud does not provide a teaching that would have enabled a person of ordinary skill to practice the present invention under the terms of 35 U.S.C. § 112, second paragraph. Without an enabling teaching, Dyrud would not have rendered applicants' invention obvious within the meaning of 35 U.S.C. 103(a).[3] The Examiner has therefore erred in maintaining this rejection, and accordingly should be reversed.

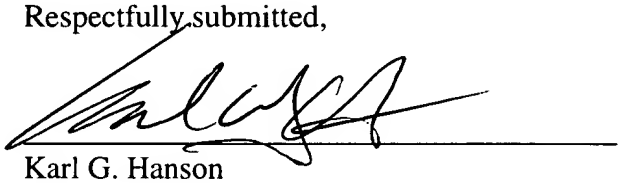
[3] *See, In re Hoeksema*, 158 USPQ 596, 600 (CCPA 1968) ("There has been no showing by the Patent Office in this record that the claimed compound can exist because there is no showing of a known or obvious way to manufacture it; hence, it seems to us that the 'invention as a whole,' which section 103 demands that we consider, is not obvious from the prior art of record."); *In re Legrice*, 133 USPQ 365, 372 (CCPA, 1962) ("We think it is sound law, consistent with public policy, that before any publication can amount to a statutory bar to the grant of a patent, its disclosure must be such that a skilled artisan could take its teachings in combination with his own knowledge of the particular art and be in possession of the invention.").

IX. Conclusion

For the foregoing reasons, appellants respectfully submit that the rejections under 35 U.S.C. § 112 and 35 U.S.C. § 103 cannot be sustained. Please reverse all of the outstanding rejections.

Dated this 13th day of November, 2000.

Respectfully submitted,



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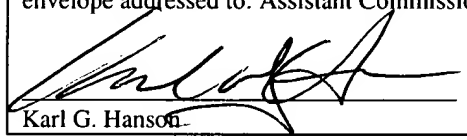

Karl G. Hanson

Dated: November 13, 2000

APPENDIX

25. A fibrous filtration face mask for filtering contaminants and/or particulate matter, which comprises:

(a) a means for securing the mask to the face of the wearer; and

(b) a non-woven fibrous layer attached to the securing means and containing (i) at least about 40 wt. % thermally bonding fibers based on the weight of the fibers in the non-woven fibrous layer, at least about 10 wt. % of the fibers in the non-woven fibrous layer being bicomponent fibers, and optionally (ii) staple fibers, the non-woven fibrous layer being molded in a cup-shaped configuration and having a surface fuzz value of not less than 7.5 after being subjected to a surface fuzz abrasion test, with the proviso that if the bicomponent fiber content is 85 weight percent or greater, then the surface fuzz value exceeds 8.0.

26. The face mask of claim 25, wherein the mask has at least two non-woven layers containing bonded thermally bonding fibers, the first non-woven layer containing about 60 wt. % bicomponent fibers and about 40 wt.% staple fibers, the second non-woven layer containing about 70 wt.% bicomponent fiber and about 30 wt.% binder fiber, the first layer being located on the inside of the second layer, and wherein the mask has a filtration layer containing blown microfibers located between the first and second non-woven layers.

27. The face mask of claim 25, wherein the surface fuzz value is not less than 8.0 regardless of bicomponent fiber content.

28. The face mask of claim 25, wherein the surface fuzz value is not less than 9.0 regardless of bicomponent fiber content.

29. The face mask of claim 25, wherein the bicomponent fiber content is at least 50 wt %.

30. The face mask of claim 25, wherein the bicomponent fiber content is at least 20 weight percent.

31. The face mask of claim 25, wherein the surface fuzz value is not less than 8.4 regardless of bicomponent fiber content.

32. A fibrous filtration face mask, which comprises:

(a) a harness; and

(b) a nonwoven fibrous layer attached to the harness and containing at least 40 weight percent thermally bonding fibers based on the weight of fibers in the nonwoven fibrous layer, at least 10 weight percent of the fibers in the nonwoven fibrous layer being bicomponent fibers, the nonwoven fibrous layer being molded in a cup-shaped configuration and having a surface fuzz value of not less than 7.5 after being subjected to a surface fuzz abrasion test, with the proviso that if the bicomponent fiber content is 85 weight percent or greater, then the surface fuzz value exceeds 8.0.

33. The fibrous filtration face mask of claim 32, wherein the nonwoven fibrous layer contains at least 20 weight percent bicomponent fiber and the surface fuzz value is not less than 8.4 regardless of bicomponent fiber content after being subjected to a surface fuzz abrasion test.

34. The fibrous filtration face mask of claim 32, wherein the nonwoven fibrous layer consists essentially of at least 20 weight percent bicomponent fibers, 0 to 80 weight percent binder fibers, and 0 to 50 weight percent staple fibers, based on the weight of fibrous material in the nonwoven fibrous layer, and wherein the nonwoven fibrous layer supports a filtration layer that contains melt-blown microfibers.

35. The face mask of claim 25, wherein the surface fuzz value is not less than 9.5 regardless of bicomponent fiber content.

36. The face mask of claim 32, wherein the surface fuzz value is not less than 9.0 regardless of bicomponent fiber content.

37. The face mask of claim 32, wherein the surface fuzz value is not less than 9.1 regardless of bicomponent fiber content.